here wild durians, figs, begonias, many rattans, Balanophera, Mussaenda, Hymenophyllum and other tropical friends.

Then the trees became lower and less dense and we saw Quercus species, Ardisia, Freycinetia, Marantaceae, to name only a few of the more noticeable ones. Higher up the vegetation became more and more stunted and we came to dense stands of pandan, Ericaceae, Dianella, Vaccinium, Gualtheria, Histiopteris and Gleichneria. There was no vegetation at the rim of the crater, but down in the crater we saw Melastoma and Gahnia.

We made this same trip last year when Mr. Yates collected some 110 species which he sent to the Bureau of Science in Manila for determination. He requested Mr. Merrill to send a set of the specimens to the University of California; so you will receive them eventually.

We are enjoying our holiday here in the hill country of Sumatra where it is delightfully cool. The climate is almost like that of Berkeley in the spring time. Brastagi is about 250 kilometers from Kisaran, where the United States Rubber Company have their large rubber plantation, and where we live. There is a colony of Americans and British people at Kisaran, about twenty. I believe there are not more than twenty Americans in all Sumatra. There is an American Consul in Medan and the ever present missionaries.

For diversions we have golf and tennis and the club at Kisaran. Mr. Yates enjoys the hunting very much,—elephants, tigers, crocodiles and wild pigs. A herd of about twenty elephants often comes within ten miles of our place.

We will be in the States just two years from now and hope to see you then. Mr. Yates joins me in sending best regards.

SIR JOSEPH HOOKER OAK (QUERCUS LOBATA Nee)

We spent one night under the spreading branches of the famous Joseph Hooker Oak near Chico. I took a few measurements. In order for the local enthusiast to boost the size of the tree, the girth is taken at 8 feet above the ground instead of the usual 4 feet. I find that at 4 feet above the ground the circumference is 22 feet 3 inches approximately. The tree is in exceedingly fine health and vigor, and shows a goodly supply of half grown acorns on many of its branches. I was particularly struck with the amount of young growth coming up under the tree. In a space exactly 10 feet square, i. e., 100 square feet, I counted 17 young oaks about 6 to 12 feet high. There is a large board placard swinging in the tree which reads:

Sir Joseph Hooker Oak

Height of tree	101 feet.
Circumference of tree 8 feet from ground	28 feet 2 inches.
Spread of north and south branches	147 feet.

Circumference of outside branches	446 feet.
Lineal measure of south branch	105 feet.
Diameter of trunk 8 feet high	9 feet.
Estimated age of tree[1]	1000 years.
Number of persons, 2 square feet to each person, under shade	7885.

The tree has also received very careful surgery, and it is wired in all directions.

After rising the next morning, we collected a few things in flower; took a swim in the creek, and then drove up to Richardson's Springs, which is about 10 miles above Chico, in a narrow hot canyon. We picked up a few plants there, and then drove across the valley.—H. A. Dutton, Aug. 12, 1921.

OPEN LETTERS

Quercus morehus in the San Bernardino Mts.

Under separate cover I am sending you specimen of oak leaves and acorn and ask you to please identify them for me. I found them near Camp Radford, San Bernardino Mts.—growing in a circle-shaped clump—about 50 trees in group, from 1 to 8 inches in diameter and about 25 feet high. The Black Oak, Quercus Californica, and Cañon Live Oak, Quercus chrysolepis, are growing all thru that section—and the only species there (except Quercus dumosa). Is this a hybrid of the two? It has characteristics of both. Is there such a hybrid recorded?—Bertha Anthony, Oct. 30, 1921.

The material represents Quercus morehus Kell. This has been taken by some botanists as a hybrid, tho others do not so regard it. It is sometimes contended, and as frequently disputed, that hybrids are not found beyond the range of their parents. This tree, if it be a hybrid, is usually if not always fertile and is now known to be widely distributed in California.—W. L. J.

REVISION OF THE CALIFORNIA SPECIES OF THE GENUS DOWNINGIA Torr.

Willis Linn Jepson

The opinion is sometimes expressed that the more recently described species of Downingia are too much alike. These small annuals do resemble each other in a general way very strikingly. They are all dwarfs and have essentially the same habit and vegetative characters. That for the most part they are definite specific units is shown, however, by the evidence here presented. I have had opportunity to study them carefully in the field and note results on the spot. It has been gratifying to discover additional facts

[1]No individual of this species has been known to reach such an age. It is probably not over two or three centuries old and could easily have reached its present size in a century and a half.—W. L. J.